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Institute of Technology is studying the application of analog computers to hydraulic engineering problems so that predictions can be made faster and more accurately.<sup>153</sup> Such problems would include river and reservoir behavior, surge tank behavior, and the many complex problems that arise in connection with the performance of hydroelectric plants. The application of analog computers to penstock, surge tank, and water hammer studies has been described.<sup>151</sup> This reference also sets up an electrical-hydraulic analogy in which the water hammer waves and surges of the hydraulic engineer become the traveling waves, electrical surges, and switching transients of the electrical engineer as shown in Figure 5, page 34.

Late in 1948, the Weather Bureau, U. S. Department of Commerce, developed an electronic device for stream flow routing that has proved to be highly effective in the preparation of river stage forecasts.<sup>145</sup> It was originally designed for routing flows from point to point along a stream, but subsequent studies indicated that the equipment is equally applicable to the direct routing of effective rainfall (runoff) over relatively large basins.

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